**Example 3:** A gardener plans to enclose a rectangular region using fencing on three sides and part of a shed on the fourth side. The side parallel to the shed needs to be twice the length of an adjacent side. If the area of the region is $6050 \, ft^2$, how many feet of fencing should be purchased?

*Draw a diagram of the region, and list the length of each side.*

![Diagram of a rectangular region with a shed]

*Write an equation for the area of the rectangular region.*

\[
\text{length of the region} \times \text{width of the region} = \text{area}
\]

\[
(x)(2x) = 6050
\]

\[
2x^2 = 6050
\]

\[
x^2 = 3025
\]
\[ x = \pm 55 \]

Since \( x \) represents the length of a section of fence, \( x \) must be a positive value.

\[ x = 55 \]

The two sections of fence that are adjacent to the shed will be 55 feet long each, and the one section of fence that is parallel to the shed will be 110 feet long. So the gardener will need 220 feet of fencing total.